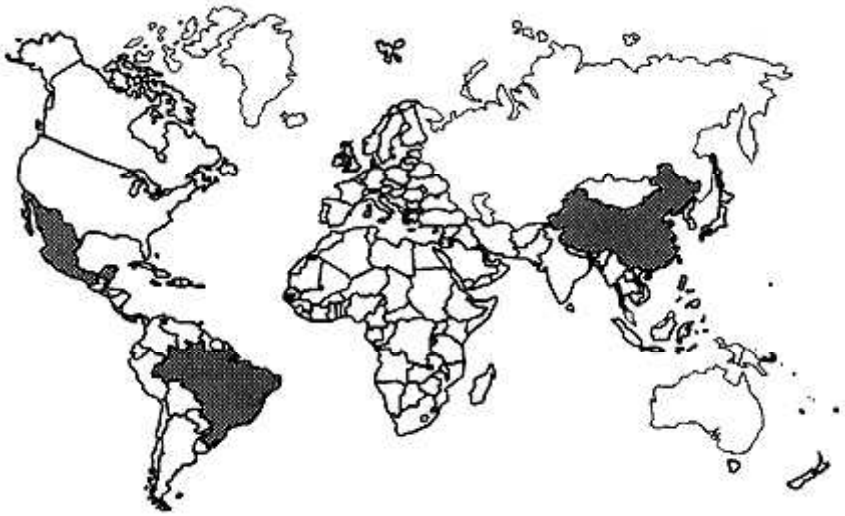
Potential Market for Satellite Technology in Meeting Telecommunication Needs of Developing Nations



A recent study examined the potential for satellite technology to meet the telecommunication needs of developing nations. The growth of these nations depends on their attracting and holding the industrial investments of developed nations. This will not be likely with the antiquated telecommunications infrastructure typical of developing nations. On the contrary, it will require an infrastructure that is compatible with international standards. Most of the developing nations perceive this necessity and are pursuing the necessary upgrades. The rate of replacement, types of technology, services affected, and the terrestrial/satellite mix differ by each nation's priorities and gross national product (GNP).

To gain a perspective on the variety of national needs, the NASA Lewis Research Center commissioned Space Systems Loral to perform case studies of Brazil, China, and Mexico. Mexico has made the most progress in terms of percent of population served and the sophistication of services offered. Although China lags behind Mexico in coverage achieved, its recent fiber, cellular, and satellite installations have been impressive, considering the nation has a much larger population and land mass.

In each of these nations, it was found necessary to separate the telecommunications needs of the general population from those of the business community. Because of the expense involved, these nations have concentrated on meeting the needs of the business community first. And this is particularly true of China. In general, the primary telecommunications demand is for conventional telephone service and television. By volume, data services are a smaller niche market, primarily used by government and business communities. However, this does not mean that the data market is not important. In fact, these governments see data services as playing a critical role in business development.

Consequently, the thrust of the telecommunications upgrades tends to favor fiber for urban areas, wireless for outlying areas, and fiber or satellite to connect the two.

China, Brazil, and Mexico are all using satellites to augment their respective telecommunication infrastructures. However, they are not relying solely on satellites to meet their needs. Each of the countries is pursuing both wireless and wired telecommunications technologies in parallel. For example, China is installing terrestrial fiber networks in urban areas along with wireless cellular systems. In parallel, they are pursuing both a very-small-aperture terminal (VSAT) based backbone data network and a nationwide fiber network interconnection.

Some of the services driving the satellite markets include broadcast television distribution, rural telephone exchange interconnection, private VSAT networks, mobile telephony, and direct-to-home television. For these, terminal equipment must be widely available, inexpensive, and easy to use. Furthermore, for the rural telephone exchange (and perhaps the mobile) application, the overall satellite network must incorporate many of the functions of the terrestrial telephone system, namely switching, routing, and access control.

Bibliography

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